MARSHALL STAR

Marshall Space Flight Center — July 22, 1999

"We bring people to space — We bring space to people"

Space Shuttle Columbia, Chandra launch date reset

Space Shuttle Columbia's Tuesday launch attempt at Kennedy Space Center, Fla., was scrubbed at the T-7 second mark in the countdown. The launch, carrying the Marshall-managed Chandra X-ray Observatory, was rescheduled for Thursday at 12:28 a.m. EDT.

Following a virtually flawless countdown, the orbiter's hazardous gas detection system indicated a 640 ppm concentration of hydrogen in Columbia's aft engine compartment, more than double the allowable amount.

System engineers in Kennedy's Firing Room No. 1 noted the indication and initiated a manual cutoff of the ground launch sequencer less than one-half second before the Shuttle's three main engines would have started. Standard safing operations followed immediately.

The safety of the flight crew and orbiter were not compromised at any time. The astronauts returned to the crew quarters at Kennedy.

*See **Chandra** on page 2*

Photo by Dennis Olive

Special visitor

NASA Administrator Dan Goldin, left, visits with a child and an adult at the Marshall picnic Saturday. See related photos on pages 4 and 5.

NASA, Boeing enter cooperative agreement to develop, fly X-37 technology demonstrator

by Martin Burkey

NASA and The Boeing Co. have entered into a $173 million cooperative agreement to develop a new experimental space plane called the X-37 that will be ferried into orbit to test new technologies for reusable launch vehicles.

NASA selected Boeing, of Seal Beach, Calif., in December 1998, for negotiations leading to a four-year agreement to develop and fly the orbital testbed. The reusable space plane will demonstrate 41 airframe, propulsion and operations technologies aimed at significantly cutting the cost of space flight. The X-37 can be carried into orbit by the Space Shuttle or be launched by an expendable rocket.

"We must make space transportation more affordable and reliable if we want to open the way for future exploration and commerce," said Susan Turner, X-37 project manager for Marshall.

"The emphasis is on advancing technology, lowering costs and increasing reliability," she said. "Technologies that have been developed in the lab and ground tested can now be taken to the next level of readiness — flight."

"Potential new commercial and military reusable space vehicle market applications for these technologies range from on-orbit satellite repair to a next-generation of totally reusable launch vehicles," said Ron Prosser, vice president of Advanced Space and Communications for Boeing Phantom Works in Seal Beach, Calif.

The government-industry team will share the cost of the program roughly 50-50. The Air Force is committing $16 million to demonstrate technologies needed to improve future military spacecraft.

The X-37 measures 27.5 feet long with a wingspan of about 15 feet. It has an experiment bay 7 feet long and 4 feet in diameter. Its shape is a 120-percent-scale derivative of the X-40A, an unpowered Air Force vehicle also designed and built by Boeing, which was released from a helicopter and glide-tested in 1998. The X-40A, which lacks the X-37's advanced thermal protection materials, rocket engine, experiment bay and other spacecraft systems, will be drop tested from a B-52 carrier plane to reduce risk prior to expanded testing with the X-37.

The unpiloted X-37 will be NASA's first reusable launch vehicle demonstrator to fly in both orbital and reentry environ-

*See **X-37** on page 7*

"Launching safely into the 21st Century"
— Safety slogan submitted by ***Andrea Thompson, AD32***

Marshall celebrity

Photos by William Rainey

On July 16, Homer Hickam, retired Marshall employee and author of the book, "Rocket Boys," discussed his adventures with Hollywood during filming of "October Sky," based on his book.

After his talk, Hickam autographed books and programs for friends and former co-workers at Marshall.

Marshall, Army monitor installation drinking water to ensure safety

by David Thaxton

As a result of recent inquiries concerning Marshall's drinking water system, the Center Operations Directorate has examined the areas of concern to ensure the safety of our personnel.

The drinking water system is provided and maintained by Redstone Arsenal. Routine water samples are obtained randomly throughout Marshall in accordance with Environmental Protection Agency (EPA) guidelines.

These samples are analyzed by a local Alabama Department of Environmental Management-managed laboratory. Special request samples are collected and analyzed by the Army's on-site EPA-certified support contractor. Previous sample data indicates the water furnished by Redstone Arsenal meets all requirements of the Safe Drinking Water Act.

Turbidity or solid particle counts are occasionally high due to lack of water turnover. This lack of use also can lead to an undesirable taste, odor and clarity of the drinking water. If you should experience this problem in your area, it can be resolved simply by letting the water fountain, sinks, etc., run for about five minutes or by flushing the toilets in the area.

To assist with this problem, the Army has strategically installed additional flush valves throughout the Center and implemented a routine procedure of flushing the drinking water lines.

To better inform the Marshall community of our drinking water quality, the Army's water monitoring data will be posted on "Inside Marshall" and updated monthly. In addition to the Army's monitoring program, Marshall Environmental Health Services will institute a new program to conduct independent spot checks.

The writer is Marshall's occupational health officer.

Chandra

Continued from page 1

Following preliminary system and data evaluation, launch managers determined that the hydrogen concentration indication was false and proceeded with a 48-hour scrub turnaround plan.

A complete review of the Shuttle's main propulsion system and related sensors was conducted Tuesday, but managers had already determined that the hydrogen concentration was actually about 114 ppm. This measurement is within allowable limits.

Because the external ignitors at Launch Pad 39B were ignited, Kennedy technicians replaced them in the next two days. These ignitors burn off the hydrogen concentration outside the orbiter, near the Shuttle main engines.

The Chandra X-ray Observatory remained powered up inside the orbiter and was not adversely affected by the scrub. Eight mid-deck payloads were removed, reserviced and installed inside the orbiter during the down period.

Weather forecasters predict a 10 percent chance that weather could prohibit Thursday's launch attempt. The forecast calls for scattered clouds at 3,000 feet and 25,000 feet; visibility at 7 miles; winds from the southeast at 6 peaking to 8 knots; temperature at 80 degrees F and relative humidity at 86 percent. There is a slight chance of coastal showers.

Stand by to go live!

Satellite interviews help tell the Marshall story

People across the United States and Canada are seeing and hearing the Marshall Center story from Marshall men and women during live satellite television interviews.

Broadcasters call them "live shots" because the interviews with the experts are broadcast live as they are conducted. They originate at Marshall's television studios and are the result of a coordinated team effort at the Marshall Center. It involves experts with the featured projects or programs, the Media Relations Department, as well as Marshall contractors WANG Government Services and Ai Signal Research Inc. (ASRI).

Live shots usually air early in the morning from 5 to 8 a.m. in 10-minute segments, with their window of opportunity depending on the time zone. Television stations use the shots, which are carried on NASA Select Television via the NASA satellite, live in their morning news programs and tape them for later use.

Photo by Emmett Given

Dawn Trout, via NASA TV, gives a live television interview to her hometown Memphis television station on her engineering work on Chandra at Marshall.

On average the interviews last from two to three minutes — invaluable airtime given by broadcast and cable outlets to spread the word of Marshall's work.

To date in 1999, more than 100 separate interviews with Marshall experts have appeared on television stations, networks and news syndicates across the United States and Canada. More are in the works for the coming months.

The cities, or markets, where the live shots have aired range from metropolitan areas such as Los Angeles, Dallas, Tampa, Cleveland and Atlanta, to smaller markets like Gainesville, Fla.; Moline Ill.; South Bend, Ind.; Springfield, Mo.; and Kingsport, Tenn.

In recent months the satellite interviews have covered topics such as lightning research; how the "gee whiz" futuristic scenes

*See **Live shots** on page 7*

Marshall experts use TV to tell Americans about NASA's Chandra

by Tracy McMahan

From New York to Texas, Americans are learning about Chandra — the world's most powerful X-ray telescope — from Marshall Center experts who helped design and develop this NASA great observatory scheduled to be placed in orbit this week.

From the Marshall Center and from the Chandra X-ray Observatory Center in Cambridge, Mass., Marshall experts are doing "live shots" — live television interviews with stations around the country.

Leading up to the launch of Space Shuttle Columbia and Chandra scheduled for 12:28 a.m. EDT Thursday, 12 live television interviews were completed with stations in New York, Tennessee, Michigan, Texas, Massachusetts, Florida, Mississippi, Georgia and Illinois, primarily by Chandra team members talking to their hometowns.

A variety of Chandra team members have participated in the television interviews — from Fred Wojtalik, the program office manager, and Martin Weisskopf, the project scientist, to those who worked on the engineering and testing of the telescope, such as Melinda Self and Tony Lavoie.

During the Shuttle mission, dozens more live shot interviews are scheduled, and other television stations are still signing up for interviews with Marshall experts.

Local Huntsville television stations are doing many of them, bringing the news about Chandra from Cambridge back home.

Television stations in Birmingham, Nashville and other Southeastern cities are also covering the Chandra mission this way.

The writer, a contractor employed by ASRI, supports the Media Relations Department.

Marshall's annual picnic
Food, fun, games for whole family

A day of sunshine provided the perfect setting for Saturday's Marshall Center annual picnic. Focusing on the theme "Celebrating the Past … Creating the Future," the day's festivities coincided with the 30th anniversary of the Apollo 11 launch and lunar landing.

Picnic chairwoman Dawn Cross and Apollo 11 anniversary chairwoman Sandra Turner extend heartfelt thanks to the committees and volunteers.

"The events served as perfect reminders of the importance of the quality and dedicated service that the Marshall Team must continue to give to our country," Cross said. "I hope the celebration afforded everyone the opportunity to spend some quality time together and strengthen the bonds of the Marshall Team."

Photo by Emmett Given

The children's parade kicked off the day's activities at the picnic grounds.

Photo by Dennis Olive

Games such as bowling provided fun for all ages.

Photo by Dennis Olive

Cool drinks afforded much-needed relief from the heat.

Picnic chairwoman Dawn Cross

Photo by Emmett Given

Linder Metts, center, shares the day with his daughters Lindsey, left, and Allison, right.

Photo by Dennis Olive

Astronauts Clayton Anderson, left, and Mike Foreman greet picnic attendees.

Picnic door prize winners

Gift certificate, Jim Taylor, EG&G;
Gift certificate, Joe Woodson, Boeing;
Gift certificate, Sadie Walker, CSC;
Bistro table set for the patio, Ken Schrock, family member, NASA;
Thermos 44,000 BTU gas grill, Anna Robbins, AJT;
Samsonite luggage-wheeled carry-on, Lois Price, TD02;
Panasonic 4-head VCR, Jim Mabry, Lockheed;
Sony cordless phone/answering machine, Judy Southard, family member, FD22;
Sharp 27" color television, Tina Johnson, family member, Ty Inc.;
Telescope, Dan Blenis, NASA;
3 CD portable boom box, Charles Brosemer, NASA;
Karoake sing-a-long cassette, John Howell, RS40;
26" bike, Ronald Ray, SCSC;
6-qt. electric ice cream maker, Joe Howell, TD30;
12 piece barbecue tool set, Lamar Futch, family member, NTI;
Buck Master deer hunter game, Floyd Clark, family member, NASA retiree;
Furby, Stacey Bradley, Alabama Inc.;
Gift certificate, Beth Carter, NASA;
Gift certificate, Tom Fischer, AMCOM;
Clock radio, Steve Chrisman, family member, Southern Foods;
Fun Touch camera, Sue DePew, PS24;
Gift certificate, Spencer Glasgow, SD80;
Gift certificate, Debbie Ledbetter, family member, ED38

Celebrating Apollo 11

Photos by Emmett Given

Center Director Art Stephenson and his wife Loa visit with historian Dr. Frances Roberts, in wheelchair, at the EarlyWorks reception July 15. The event kicked off the yearlong von Braun Celebration of the Arts.

A fountain in the von Braun Office Complex was dedicated representing Marshall's future role in Space Transportation.

Raven Hood, left, helps Apollo 11 astronaut Edwin "Buzz" Aldrin cast his moonboot print for the "Footprints to the Future" during the fountain dedication at Bldg. 4200.

Members of the original von Braun rocket team participate in the Saturn V replica dedication ceremony at the U.S. Space & Rocket Center. From left, Walter Jacobi; Konrad Dannenberg; Apollo 14's Edgar Mitchell; NASA Administrator Dan Goldin; Apollo 12's Dick Gordon; Gerhard Reisig; Werner Dahm; Marshall Director Art Stephenson; Mike Wing director of the Space & Rocket Center; Walter Haeusserman; and Ernst Stuhlinger.

Photo by Doug Stoffer

The U.S. Space & Rocket Center presented Apollo 11 Moon landing re-enactments, complete with entertainment and fireworks. Monday night's performance was dedicated to the Marshall team.

Runners pass the torch to symbolize generations of the Marshall team from the Apollo era to today. The easy paced run, held Saturday, kicked off the weekend's events.

Consultant at Marshall to help raise safety awareness

by Debra Valine

Employees at Marshall are in the midst of a culture change. One aspect of that change is the way management and employees look at safety.

Center Director Art Stephenson and his staff are dedicated to improving Marshall's safety record, said Mike Altice, a former senior safety consultant with the DuPont Corp. who is at Marshall to help identify safety weaknesses. "They are not satisfied with Marshall's safety record.

"My task at Marshall is to help raise the awareness of safety and the responsibility that management has to implement a cultural change in the safety attitude of themselves and all the employees at the Center," Altice said. He likens himself to a microscope for identifying the problem, rather than the instrument for remedying safety weaknesses.

"Safety has to be a day-to-day activity by all employees," Altice said. "You should ask yourself, what have I done today to make Marshall a safer place to work? If you can keep one person from getting injured, it's worth it."

Altice who has 35 years experience in his field — 25 years with Dupont — is at Marshall until September to help identify areas where safety can be improved. Retired from Dupont, he now works as a safety consultant. Statistics compiled by the National Safety Council show DuPont to be the world's safest company.

Sheila Cloud, director of the Center Operations Directorate, recruited Altice after she attended a seminar where he spoke. At the seminar, she told him, "I need some help. I do not want anybody hurt on my watch. How can you help me in Center Operations?"

Mike Altice

Coincidentally, a fire in the storage area of Bldg. 4755 at Marshall occurred shortly after the seminar, which only encouraged Cloud to incorporate new safety standards, Altice said. "She wants to make Center Operations the example of what can be done if people pay attention to safety.

"NASA has always focussed on flight safety," Altice said. "If we can take that same intensity and apply it to the day-to-day operations, people will realize that we really do care about their well-being.

"You hear the words 'safety first' a lot, but I feel you need to give equal priority to safety, schedules, manpower, cost, etc.," he said. "Managers need to realize that when you get behind schedule, you work overtime or bring in extra help, but when you get behind in safety, you never recover from it. After someone is hurt, loses a limb or their life, it is too late. Nobody wants that to happen.

"If you are not doing things safely, you are not doing the whole job," Altice said. "Safety is done with people and for people, not to them. If you are trying to force safety on them, something is wrong."

Altice said management has the responsibility for safety, but it boils down to the fact that all employees are responsible for themselves and anybody else who comes into their environment. "If we were to bring friends and family into our workplace, we would want to make sure they are safe. We should do the same for our co-workers. This is what Art is emphasizing.

"It's not that Marshall's safety record is poor," Altice said. "Marshall's safety record by most standards is pretty good. But statistics are numbers. "You have to think about if one person gets hurt, that is one too many. There is only one incentive for safety: You get to go home in the same condition you arrived in."

Altice will be at Marshall two to three days a week most weeks until September. His schedule allows him to make suggestions, step back to see what's taking place, and then make additional recommendations. Anyone who wants to talk to him about safety can visit him in Bldg. 4200, room 940A or call him at 544-3984.

His goal is to see management demonstrating their dedication to creating a safe environment by what he calls "walk the talk." Managers have to show employees how to work safely, not just tell them to work safely, he said.

The writer, a contractor employed by ASRI, is the Marshall Star editor.

Center blood drive being held Friday at Bldg. 4752

The American Red Cross will hold a blood drive from 8 a.m.-1:30 p.m. Friday at Bldg. 4752. Those whose last names begin with A-B should donate at 8 a.m.; C-F, 8:30 a.m.; G-H, 9 a.m.; I-L, 9:30 a.m.; M-O, 10 a.m.; P-S, 10:30 a.m.; and T-Z, 11 a.m. Representatives will be available until 1:30 p.m. for anyone missing his or her appointment time.

Marshall employees who serve as blood donors without compensation will be authorized four hours of excused absence. The four-hour period is in addition to the time to travel to and from the blood center, waiting to give blood and giving blood. If rejected, donors must return to work and the four-hour period is not authorized. The excused absence is to be taken on the day the blood is donated. Donors are encouraged to take the full four hours of excused absence for this purpose. A longer period may be authorized only when required for recuperation.

Contractors will comply with the policy of their respective companies.

Live shots

Continued from page 3

in the latest Star Wars movie could be reality in a few short years; large cities creating their own weather through urban heat islands; and women's key leadership roles in future space transportation systems at Marshall.

It takes a team of people to produce and deliver the satellite interviews. A Marshall Media Relations specialist, the producer, director, audio technician, videotape operator, broadcast engineer, studio camera operator, Goddard Space Flight Center satellite technician, electronic technician at Marshall's Central Distribution Center, and NASA Headquarters producer work together in a sometimes hectic environment to deliver a first-class product.

"It's extremely important to get the message across to people everywhere," said Connie James, live shot lead producer with WANG. "It's a great opportunity to reach large numbers of people with a single, concentrated effort."

The Media Relations Department works with Marshall programs and projects people to identify topics as candidates for the interviews. The expert is scheduled, the satellite time is reserved and then the selling begins.

"We pitch the live shots to selected areas. We fax information to the news departments about what we're offering, follow-up with telephone calls and they call us," said Jack Robertson, electronic media specialist with ASRI in the Media Relations Department. "Our success depends on the topic of the campaign, the interest level of that local broadcaster and the timing.

"We focus on why a subject is important to a viewer in Dubuque, Seattle or Orlando. When possible, we develop an angle of interest to that locality such as a Marshall employee is a native of that community," he said.

The "talent," or the person being interviewed, looks at a television camera and hears the broadcast audio through an earpiece. He or she listens to questions from the newsperson on the other end of the satellite link and responds like a regular interview. Videotape about the topic is inserted to tell the story visually.

On any live shot, there is the potential of reaching hundreds of thousands of people within a very short period.

"This is really a proactive way to get the word to people who may have never heard about us," said Dr. Steve Goodman, senior scientist at the Global Hydrology and Climate Center. As an expert, he was interviewed about lightning research during live shots in early June.

Goodman and fellow researcher Dr. Dennis Boccippio gave 31 television interviews on lightning research, weather forecasting and public safety.

Susan Turner, X-37 project manager at Marshall, was one of four women featured in recent television interviews that highlighted the accomplishments of women at Marshall.

"I like talking about what I do," Turner said. "I think it's important to show the different things we're working on at Marshall. The more we talk about it, the better. It is truly our obligation to tell the public how we're spending their money," she said.

X-37

Continued from page 1

ments, operating at speeds up to 25 times the speed of sound. NASA's X-33 and X-34 technology demonstrators are suborbital and operate at lower speeds.

After the X-37 is deployed, it will remain in orbit up to 21 days, performing a variety of experiments before reentering the atmosphere and landing. Various locations are being studied for its landing site.

Assembly, integration, checkout and tests are planned at Boeing facilities in Palmdale and Seal Beach, Calif., in 2000 and 2001.

The first unpowered flight test of the X-37 from a B-52 is planned for fall 2001 at Edwards Air Force Base, Calif. Two orbital tests are planned for 2002.

The goal of the X-37 and NASA's other reusable technology demonstrators is to reduce the cost of getting into space from $10,000 to $1,000 per pound while increasing reliability.

The X-37 government team, led by the Marshall Center, also includes NASA's Ames Research Center, Mountain View, Calif.; Kennedy Space Center, Fla.; Goddard Space Flight Center, Greenbelt, Md.; Langley Research Center, Hampton, Va.; and Dryden Flight Research Center and the U.S. Air Force Flight Test Center, Edwards Air Force Base.

The X-37 industry team is led by The Boeing Co. of Seal Beach. Other Boeing facilities participating in the program are located in Huntington Beach and Palmdale, Calif., Seattle and St. Louis.

The writer, a contractor employed by ASRI, supports the Media Relations Department.

Artist's concept of the X-37 technology demonstrator.

Employee Ads

Miscellaneous

★ Betsy Ross wall flag w/hardware, 3'x5', $8. 721-0617
★ GE electric clothes dryer, white, 6-leg children's swing set, $95 each; gas fireplace insert, $150. 881-6040
★ Fifth-wheel trailer hitch, $150. 355-0302
★ TI professional computer and TI-855 printer, $150. 350-3784
★ New matching sofa and loveseat, taupe, burgundy and olive green, $1,000. 881-0995
★ Drafting table with drafting machine, includes two 4-drawer cabinets, 72"x45", $75 obo. 837-4021
★ Honda mower, HR214, self-propelled, bagger, blade brake, $185. 837-0085
★ Moving sale: Patio furniture, garden tractor, chainsaw, Weedeater, 20' Searay, 1974 Dodge pickup. 723-2898
★ Nintendo 64 system with one controller, $80. 882-0461
★ Yamaha YPP-50 electric piano, 76 semi-weighted keys, MIDI in/out, built-in stand, $400. 353-9514
★ 1983 motor home, 23' Fleetwood Jamboree, $7,900 obo. 544-8364/881-8580
★ Satellite dish, 8', electronics not provided. 880-6335
★ Two Akai 3-way floor speakers, model SR-LA301, 12" woofer, 4" midrange, 3" tweeter, 27"x15"x13", never used, $20. 895-6640
★ Dinette, 42x48 with leaf, four chairs, $50. 882-1833
★ 1981 Sunline travel trailer, 21' with awning, sleeps up to six, $1,200. 778-9149
★ Kenmore heavy-duty washing machine, 8 yrs. old, $75 obo. 882-6446
★ Boy's and girl's 10-speed bike, $30 each; two end tables and coffee table, $75. 464-5911
★ 1998 Yamaha TX500 twin street bike, black, $500 obo; black Bieffe helmet, $100. 539-1083
★ Queen-size brass bed and brass nightstand w/ glass top, $175. 882-2323
★ Bedroom suite, black/jadestone queen platform bed with headboard, dresser, nightstand, $600. 922-0915
★ Moving Sale: Washer, dryer, couch, recliners, TV, cameras, clock, bicycle, AM/FM radios, etc. 931-424-8812
★ Trampoline, 14', $130; Little Tykes castle, $95; computer chair, $40. 922-9387

Vehicles

★ 1988 Biarritz Cadillac, 51K miles, $5,000. 881-7757
★ 1988 Mercury Sable wagon, 3.8L, $500+ in new parts, $2,200 obo. 828-6213
★ 1991 Ford Explorer XLT, 139K miles, $7,000. 739-0806 or e-mail: ford_db@yahoo.com
★ 1989 Jeep Cherokee, 4-wd, air conditioner, auto transmission, PS/PB, 106,800 miles, $4,975. 353-3229
★ 1986 Bronco II, electric, 4-wd, automatic hubs, 5-speed, air, new engine, clutch, paint, brakes, $3,500. 534-8186
★ 1986 Toyota Camry, 4-door, automatic, $1,300 obo. Pager 564-3508 or 650-5375
★ 1998 Eddie Bauer Expedition, white, $29,000. 890-0297
★ 1999 Cadillac DeVille, 11K miles, sunroof, loaded, estate settlement — must sell, $35,500. 233-4382
★ 1997 GEO Metro, Lsi, 27K miles, auto, air, 4-cyl., $4,200. 429-3805
★ 1993 Honda Accord EX, 4-door, loaded, keyless entry, sunroof, $8,000. 533-0099
★ 1969 Chevrolet Caprice, 4-door hardtop, 89K miles, 350/300 HP, owned since 1970, $3,500. 881-0645
★ 1992 300 ZX, 2+2, 5-speed, pearlglow wl/tan fabric, T-tops, Bose w/CD, ABS, airbag, 90K miles, $11,900 negotiable. 837-1035

Wanted

★ Colonial Homes magazines, issues from 1995. 882-1097

Found

★ Bracelet, in visitor parking lot Bldg. 4200. 544-4758

Center Announcements

☞ ***NASA Ski Week*** — The 9th Annual NASA Ski Week will be hosted at Big Sky, Mont., Jan. 22-29, 2000. Skiers from eight NASA Centers will gather at this 3,500-acre resort for camaraderie and winter sports. All Marshall employees, on-site contractors, retirees and dependents are eligible to participate. For information, call 1-233-0705 or e-mail: Thomas.S.Dollman@msfc.nasa.gov

☞ ***NARFE Meeting —*** The National Association of Retired Federal Employees (NARFE) Chapter 736 will meet at 11 a.m. July 28 at Piccadilly's in Decatur. All retired federal employees are welcome to attend. For more information, call Marty Eddy at 773-4826.

☞ ***MARS Luau —*** Tickets for the MARS Ballroom Dance Club's Aug. 14 luau will be available Friday. The semi-formal event will be held at the Von Braun Center, and will feature ballroom music by The Tradewinds. Socializing will begin at 6:30 p.m., and a buffet dinner will be served at 7 p.m., followed by dancing from 8 to 11:00 p.m. Tickets, at $19 per person with a $3 discount for members, can be purchased from Tamara Landers at 544-6818, Pat Sage at 544-5427, Ed Ogozalek at 837-1486, Linda Kinney at 544-0563, Bob Williams at 544-3998 or Hugo Berry at 544-3525. Reservations for a table of eight can be made by calling Woody Bombara at 650-0200.

☞ ***MARS Fishing Club —*** Results of the Wheeler Lake/First Creek tournament on July 9 are: first place — Dale Hedden and Daryl Simonds with fish weighing 5.88 lbs.; second place — Don McQueen and Brian Mitchell with fish weighing 5.62 lbs.; and third place — Joe Glover and Ricky Pickett with fish weighing 5.18 lbs. Big fish honors went to Dale Hedden with a 3.95-pound bass. The next tournament is scheduled for Friday night, Aug. 20 at Wheeler Lake, First Creek. It is a Bass/Buddy Tournament, so call your buddy, buy a large box of Moon Pies and join the fun! The club encourages participation by NASA employees, family members and on-site contractors. A boat and experience are not required. For more information, call Charles Kilgore at 544-9437, Don McQueen at 544-9073 or Charlie Nola at 544-6367.

☞ ***MARS SCUBA Club —*** The MARS SCUBA Club will hold a picnic, dive and tune-up class Saturday at 11 a.m. at the Madison Aquatic and Recreational Park. Members and non-members are welcome. For more information, call Jim Eldridge at 544-6266.

☞ ***Shuttle Buddies Breakfast —*** The Shuttle Buddies will meet for breakfast at 9 a.m. Monday at Shoney's on University Drive West. For more information, call Deemer Self at 881-7757.

☞ ***Photo Lab Retirees —*** Photo lab retirees meet Aug. 3 at 9:30 a.m. at Shoney's at University and Memorial Parkway. For more information, call Charles Allen at 852-0917.

☞ ***MESA Meeting —*** All members are invited to the monthly Marshall Engineers and Scientists Association membership meeting at 11:30 a.m. Thursday in Bldg. 4471, room C-105. Refreshments will be served.

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